APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,076	10/13/2003	KianKeong Ooi	STL11367	4341

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David K. Lucente
Seagate Technology LLC
Intellectual Property - COL2LGL
389 Disc Drive
Longmont, CO 80503

EXAMINER
MERCEDES, DISMERY E

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>9/18/2006</u>.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-13 and 15-25* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-6,9,10,13,15,18,21,22 and 25* is/are rejected.

7) ☒ Claim(s) *7,8,11,12 and 16-24* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *13 October 2003* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments with respect to claims 1,15,25 have been considered but are moot in

view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section
> 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the
> subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

3. Claims 1-6,9-10,13,15,18,21,22,25 rejected under 35 U.S.C. 103(a) as being unpatentable over

Greenberg et al. (US 6,104,558).

As to Claim 1, Greenberg et al. discloses a method comprising a step (a) of determining a

location within a cycle by reading a portion of a cyclic bit sequence (as depicted in Figs. 2 & 4,

"210"), the bit sequence containing several interspersed bit-group sets (as depicted in Fig.4, "402")

that each contain a plurality of series that each consist of several consecutively-placed bit-groups (as

depicted in Fig.5, four consecutively placed identical bit groups). Although, Greenberg et al.

discloses consecutive placed bit groups as depicted in fig.5, he doesn't specifically discloses the bit

groups are identical. However, as defined in the instant specification in page 12, lines 23-28, the

identical bit group indicates the sector number (i.e. a circumferential location), and as disclosed in

the cited reference, the consecutive bit groups uniquely identify the sector on the disk for

verification of data before a read or write operation (see col.5, lines 59-65), therefore, it would have

been obvious to one of ordinary skill in the art to modify the sequence as disclosed by Greenberg et

al. to implement identical bit groups, because it is up to the user to encode the unique identifier (i.e.

sector number, head number) using random, different, or identical bits for the purpose of obtaining more accurate positioning on the medium.

As to Claim 2, Greenberg et al. further discloses: (a1) reading several servo fields from a data surface, each of the servo fields consisting of a respective one of the bit-groups, an analog portion and a digital remainder portion; and (a2) deriving a sector number from the bit-groups and not from the digital remainder portion; the sector number being the determined location within the cycle (see figs.2 and figs.4-5).

As to Claim 3, Greenberg et al. further discloses of accessing a sector having a sector number, the sector number being the determined location within the cycle (as depicted in Figs.4-5).

As to Claim 4, Greenberg et al. further discloses of writing each of the bit-groups as a mutually adjacent plurality of bits within a respective servo field (as depicted in Fig.5).

As to Claim 5, Greenberg et al. further discloses selecting each of the sets so that each of the bit-groups in the set uniquely identifies the set (see figs.3 & 5; col.5, lines 59-61).

As to Claim 6, Greenberg et al. further discloses writing several of the series consecutively and so that the series each consist of exactly S consecutively-placed bit-groups, where S > 3 (see figs.4 and 5, wherein there are 4 consecutively-placed bit groups, which is greater than 3).

As to Claim 9, Greenberg et al. further discloses the determining step is completed within one disc revolution of activating the transducer that reads the cyclic sequence (col.8, lines 57-67, wherein once the sector number is determined during each revolution a counter is reset at the index mark).

As to Claim, 10, Greenberg et al. further discloses writing each of the bit-groups within a few nominal bit-lengths of a respective track identifier (as depicted in Fig.5 and col.8, lines 17-56).

As to Claim 13, Greenberg et al. further discloses detecting a plurality of inter-set transitions in the read portion of the bit sequence (as depicted in Fig.4, "servo burst").

As to Claim 15,18,21,22 are apparatus claims drawn to claims 1, 3 & 5 and are therefore rejected for similar reasons as set forth in the rejection of claims 1, 3 & 5, above.

As to Claim 25, Greenberg et al. further discloses at least one rotatable element having at least one track with servo sectors (see figs.2,4,5) and multiple sets of bit-groups distributed along the track (see figs.4-5), in which the identical bit-groups reside in selected consecutive ones of the servo sectors (see figs.2,5). Although, Greenberg et al. discloses consecutive placed bit groups as depicted in fig.5, he doesn't specifically discloses the bit groups are identical. However, as defined in the instant specification in page 12, lines 23-28, the identical bit group indicates the sector number (i.e. a circumferential location), and as disclosed in the cited reference, the consecutive bit groups uniquely identify the sector on the disk for verification of data before a read or write operation (see col.5, lines 59-65-- for the purpose of obtaining more accurate positioning on the medium), therefore, it would have been obvious to one of ordinary skill in the art to modify the sequence as disclosed by Greenberg et al. to implement identical bit groups, because it is up to the user to encode the unique identifier (i.e. sector number, head number) using random, different, or identical bits, as long as the desired outcome is obtained.

Allowable Subject Matter

Claims 7-8,11-12,16-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Note: Claim 7 is allowable since the cited references fails to disclose: *in which the determining step (a) includes a step (a1) of assembling a several data surfaces into a co-rotating assembly so that a pair*

of the data surfaces have a significant angular misalignment smaller than a predetermined threshold, at least one of the pair containing: the cyclic bit sequence. Claim 8 is allowable since the cited references fails to teach or suggest: *"in which the determining step (a) includes steps of (a1) assembling first and second disc surfaces into a co-rotating assembly so that the surfaces gave a significant angular misalignment, the second disc containing the cyclic bit sequence; (a2) measuring a first portion on the fist disc or surface; (a3) reading the cyclic bit sequence portion from the second disc or surface; and (a4) determining the location based on a combination of the first position from the measuring step (a2) and the sequence portion from the reading step (a3)."* Claim 11, is allowable since the cited references fails to teach or suggest: *determining step (a) includes steps of: (a1) reading a bit pattern from a data surface containing the cyclic bit sequence; (a2) verifying that the bit pattern from the reading step (a1) is consistent with the bit sequence; and (a3) accepting the bit pattern as the read portion based on the verification step (a2).* Claims 16,19,23 are allowable since the cited references fails to teach or suggest: *each of the bit-groups resides in a respective nominally-contiguous digital portion of a respective servo sector, each of the digital portions being bounded by two respective non-digital portions of the respective servo sector, each of the digital portions occupying a total area A, each of the bit-groups occupying a smaller area B that is at most about 15% of A.* Claims 17,20,24 are allowable since the cited references fails to teach or suggest: *the cyclic bit sequence resides on one annular data surface of the rotatable element, in which the data surface includes a multitude of servo sectors each containing one of the bit-groups, the servo sectors occupying a total area A, the bit-groups occupying a smaller area B<2% of A.*

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Codillian et al. (US 6,934,114); Lapstun et al. (US 2004/0148558); Codilian et al. (US 6,952,322); Holsinger (US 2002/0057516); Dobbeck et al. (US 6,034,831).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dismery E. Mercedes whose telephone number is 571-272-7558. The examiner can normally be reached on Monday - Friday, from 9:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DM

ANDREA WELLINGTON
SUPERVISORY PATENT EXAMINER